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PTO/SB/05 (4/98)

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UTILITY PATENT APPLICATION TRANSMITTAL

Only for new nonprovisional applications under 37 C.F.R. § 1.53(b)

Attorney Docket No.

1620/76982

First Inventor or Application Identifier

Ekkert

Title

Cap and container assembly

Express Mail Label No.

EL133503808US

12/29/99

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents

ADDRESS TO:

Assistant Commissioner for Patents
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Washington, DC 20231

1. ☒ *Fee Transmittal Form (e.g. PTO/SB/17)
(Submit an original and a duplicate for fee processing)

5. ☐ Microfiche Computer Program (Appendix)

2. ☒ Specification
(preferred arrangement set forth below) Total Pages **15**
- Descriptive title of the Invention
- Cross References to Related Applications
- Statement Regarding Fed sponsored R & D
- Reference to Microfiche Appendix
- Background of the Invention
- Brief Summary of the Invention
- Brief Description of the Drawings (if filed)
- Detailed Description
- Claim(s)
- Abstract of the Disclosure

6. Nucleotide and/or Amino Acid Sequence Submission
(if applicable, all necessary)
a. ☐ Computer Readable Copy
b. ☐ Paper Copy (identical to computer copy)
c. ☐ Statement verifying identify of above copies

3. ☒ Drawing(s) (35 U.S.C. 113) Total Sheets **4**

4. Oath or Declaration

Total Pages **2**

- a. ☒ Newly executed (original or copy)
- b. ☐ Copy from a prior application (37 C.F.R. § 1.63(d))
(for continuation/divisional with Box 16 completed)
- i. ☐ **DELETION OF INVENTOR(S)**
Signed statement attached deleting
inventor(s) named in the prior application,
see 37 C.F.R. §§ 1.63(d)(2) and 1.33(b).

*NOTE FOR ITEMS 1 & 13: IN ORDER TO BE ENTITLED TO PAY SMALL
ENTITY FEES, A SMALL ENTITY STATEMENT IS REQUIRED (37 C.F.R. §
1.27), EXCEPT IF ONE FILED IN A PRIOR APPLICATION IS RELIED UPON (37
C.F.R. § 1.28).

ACCOMPANYING APPLICATION PARTS

7. ☒ Assignment Papers (cover sheet & document(s))
8. ☐ 37. C.F.R. § 3.73(b) Statement (when there is an assignee) ☐ Power of Attorney
9. ☐ English Translation Document (if applicable)
10. ☒ Information Disclosure Statement (IDS) PTO-1449 ☒ Copies of IDS Citations
11. ☐ Preliminary Amendment
12. ☒ Return Receipt Postcard (MPEP 503)
(Should be specifically itemized)
13. ☒ *Small Entity Statement(s) (PTO/SB/09-12) ☐ Statement filed in Prior application, Status still proper and desired
14. ☐ Certified Copy of Priority Document(s) (if foreign priority is claimed)
15. ☐ Other: _____

16. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment

☐ Continuation ☐ Divisional ☐ Continuation-In-Part (CIP) Of prior application No.: _____ / _____

Prior application information: Examiner _____ Group/Art Unit: _____

FOR CONTINUATION or DIVISIONAL APPS ONLY: The entire disclosure of the prior application, from which an oath or declarations supplied Under Box 4b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by Reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

17. CORRESPONDENCE ADDRESS

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37135

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Date

29 December 1999

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Applicant or Patentee: Ekkert
Serial or Patent No.: _____
Filed or Issued: _____
For: CAP AND CONTAINER ASSEMBLY

Atty Docket No. 1620/76982

VERIFIED STATEMENT (DECLARATION) CLAIMING SMALL ENTITY STATUS
(37 CFR 1.9(f) AND 1.27(c) - SMALL BUSINESS CONCERN)

I hereby declare that I am

- () the owner of the small business concern identified below:
(X) an official of the small business concern empowered to act on behalf of the concern identified below:

NAME OF CONCERN: Phoenix Closures, Inc.

ADDRESS OF CONCERN: 1899 High Grove Lane, Naperville, Illinois 60540

I hereby declare that the above identified small business concern qualifies as a small business concern as defined in 13 CFR 121.12, and reproduced in 37 CFR 1.9(d), for purposes of paying reduced fees to the United States Patent and Trademark Office, in that the number of employees of the concern, including those of its affiliates, does not exceed 500 persons. For purposes of this statement, (1) the number of employees of the business concern is the average over the previous fiscal year of the concern of the persons employed on a full-time, part-time, or temporary basis during each of the pay periods of the fiscal year, and (2) concerns are affiliates of each other when either, directly or indirectly, one concern controls or has the power to control the other, or a third party or parties controls or has the power to control both.

I hereby declare that rights under contract or law have been conveyed to and remain with the small business concern identified above with regard to the invention, entitled:

CAP AND CONTAINER ASSEMBLY

by inventor(s): Ekkert

described in:

- (X) the specification filed herewith.
() application serial no. _____, filed _____
() Patent No. _____, issued _____

If the rights held by the above-identified small business concern are not exclusive, each individual, concern, or organization having rights to the invention is listed below* and no rights to the invention are held by any person, other than the inventor, who would not qualify as an independent inventor under 37 CFR 1.9(c) if that person made the invention, or by any concern which would not qualify as a small business concern under 37 CFR 1.9(d), or a nonprofit organization under 37 CFR 1.9(e).

*NOTE: Separate verified statements are required from each named person, concern, or organization having rights to the invention averring to their status as small entities. (37 CFR 1.27)

NAME _____

ADDRESS _____

() INDIVIDUAL () SMALL BUSINESS CONCERN () NONPROFIT ORGANIZATION

I acknowledge the duty to file, in this application or patent, notification of any change in status resulting in loss of entitlement to small entity status prior to paying, or at the time of paying, the earliest of the issue fee or any maintenance fee due after the date on which status as a small entity is no longer appropriate. (37 CFR 1.28(b))

I hereby declare that all statements made herein of my own knowledge are true, and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this verified statement is directed.

NAME OF PERSON SIGNING: _____

TITLE OF PERSON OTHER THAN OWNER _____

ADDRESS OF PERSON SIGNING _____

SIGNATURE: Len Ekkert

Len Ekkert

Vice President

1899 High Grove Lane, Naperville, Illinois 60540

Date: Dec 10, 1999

PATENT APPLICATION
1620/76982

I hereby certify that this paper is being deposited with the United States Postal Service as Express Mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231, on this date.

29 DEC 1999

V. Hughes

Date

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CAP AND CONTAINER ASSEMBLY

BACKGROUND AND SUMMARY

This invention relates to containers which can be opened and closed repeatedly and continue to achieve a good seal between the cap and the container.

A good seal is especially desirable if the substance in the container needs protection from the outside environment, such as a powdered beverage mix which can cake with continuous exposure to very humid air. It is desirable to be able to manufacture an inexpensive cap and container assembly, which can be used for initial packaging of the product prior to sale, and which can continue to be opened and resealed by the purchaser of the product.

Some existing containers are too expensive for the packaging of inexpensive products, difficult to reseal effectively, or simply cannot be resealed effectively.

The present invention is a novel cap and container assembly which can repeatedly achieve a good seal. Annular protrusions depend from a curved cap top, and the top of the container neck slants out, then in, and then out as the neck extends down from the mouth of the container. As the cap is secured to the container, the protrusions engage exterior and interior surfaces of the neck, and the curved cap top and the upper part of the neck flex to facilitate forming a good seal. Stopping surfaces form a positive stop to lower engagement of the cap with respect

1 to the container beyond a certain point, limiting the temporary
2 deformation of shape caused by the flexing. The dimensions of
3 the protrusions and the neck surfaces are matched to achieve a
4 good seal at the lowest engagement of the cap with respect to the
5 container permitted by the stopping surfaces.

6 The features of the present invention which are believed to
7 be novel are set forth below with particularity in the claims.
8 The invention, together with further advantages thereof, may be
9 understood by reference to the following description in
10 conjunction with the accompanying figures, which illustrate some
11 embodiments of the invention.

12 BRIEF DESCRIPTION OF THE DRAWINGS

13 FIG. 1 is a side perspective view of the cap and container
14 assembly with the cap secured to the container.

15 FIG. 2 is a top perspective view of the cap and container
16 assembly.

17 FIG. 3 is a cross-sectional view taken along line 3-3
18 depicted in FIG. 2.

19 FIG. 4 is an enlarged view of the identified portion in FIG.
20 3.

21 FIG. 5 is a similar view as illustrated in FIG. 4, but of an
22 alternative embodiment.

DETAILED DESCRIPTION

FIGS. 1 through 4 show an example of the present cap and container assembly. It comprises a container 10 and a cap 20 designed for mating engagement with each other. The container 10 and cap 20 are manufactured as molded plastic parts, preferably composed of polypropylene, polyethylene, or similar materials.

As best seen in FIG. 3, the container 10 includes a base 11 and a neck 12. The neck 12 is the portion of the container 10 to which the cap 20 is engaged, and the end of the neck 12 defines a mouth of the container. The cap 20 includes a curved top 21 and a skirt 22 depending peripherally from the top 21. A portion of the exterior surface of the neck 12 is threaded, a portion of the interior surface of the skirt 22 is threaded, and the cap 20 can be secured to the container 10 by mating engagement of those two threaded-portions. A number of stops or projections 23 on the interior surface of the skirt 22 are designed to contact a shoulder 13 on the exterior surface of the neck 12 at a certain point as the cap 20 is secured to the container 10. Those projections 23 and shoulder 13 act as stopping surfaces to stop any lower engagement of the cap 20 with respect to the container 10 and to provide a gap 14 between a bottom edge of the cap 20 and an upper part of the base 11. In FIGS. 3 and 4, the shoulder 13 is seen above the threaded portion of the exterior surface of the neck 12.

As best seen in FIGS. 3 and 4, a relatively long sealing flange or first annular protrusion 24 and a plurality of much

1 smaller second annular protrusions 25 depend from an interior
2 surface of the top 21. The top 21 is generally convex as viewed
3 from inside the cap 20. The neck 12 is substantially symmetrical
4 about a central vertical axis. As the neck 12 extends down from
5 the mouth, it is preferable if the neck 12 initially doubles back
6 creating a flexible lip and then has a lower interior sealing
7 surface 17 for sealing with the first protrusion 24, before
8 extending down to the threaded portion. That is, the neck 12
9 initially becomes wider forming an upper exterior sealing surface
10 15 at an angle of about 10° to about 20°, and preferably about
11 15°, with an imaginary horizontal plane in an unstressed state.
12 The second annular protrusions 25 are positioned to engage this
13 upper exterior sealing surface 15 of the neck 12. It is
14 preferable that the neck 12 then become narrower first forming an
15 exterior surface 16 at an angle of about 10° to about 25°, and
16 preferably about 20°, with an imaginary horizontal plane, and
17 second becoming more vertical while continuing to narrow and
18 forming the lower interior sealing surface 17 at an angle of
19 about 10° to about 20°, and preferably about 14°, with a surface
20 of an imaginary vertical cylinder (in an unstressed state). The
21 first annular protrusion 24 can engage this lower interior
22 sealing surface 17 of the neck 12. The neck 12 can then become
23 wider than the lip as it continues down to meet the base 11.

24 The surfaces 15, 16, and 17, like all of the neck 12 in the
25 example illustrated by FIGS. 1 through 4, curve symmetrically
26 about a central vertical axis. However, the surfaces 15, 16, and

1 17, may be characterized as generally frusto-conical. That is,
2 in a cross-sectional view taken along any plane which includes
3 the central vertical axis, the surfaces 15, 16, and 17 would
4 appear as straight line segments. As seen in FIG. 4, the angle
5 of surface 15, 16, or 17, mentioned above, would be the angle of
6 such a straight line segment - as represented by angles α , β , and
7 γ , respectively.

8 With the example just described, and illustrated in FIGS. 3
9 and 4, the first annular protrusion 24 will protrude down further
10 from the top 21 than the second protrusions 25, as both are
11 designed to engage and seal with a particular surface area of the
12 neck 12. It is preferable that materials and the geometry of the
13 top 21, the first protrusion 24, and the neck 12 render them
14 sufficiently flexible to allow for some temporary deformation of
15 shape. This is facilitated by the curvature of the top 21 and
16 the bends in the neck 12. The temporary deformation results from
17 the pressure exerted as the cap 20 is secured to the container
18 10. The resilience of the materials used maintains that pressure
19 and the resulting good seal between the cap 20 and the container
20 10.

21 It is preferable that the angles, of the first annular
22 protrusion 24 and of the lower interior sealing surface 17 of the
23 neck 12 with which the first protrusion 24 will engage, are
24 generally matched to achieve a good seal at the lowest engagement
25 permitted by the stopping surfaces 13 and 23. Similarly, as seen
26 in FIGS. 3 and 4, the lengths of the second annular protrusions

1 25 will vary to match the angle of the upper exterior sealing
2 surface 15 of the neck 12 with which the second protrusions 25
3 will engage. Of course, the particular configuration described
4 is only an example and is not the only one which will work. Upon
5 engagement, the interior surface of the top 21 will be pressed
6 upward, and the upper exterior sealing surface 15 will be pressed
7 downward putting inward pressure on the lower interior sealing
8 surface 17 and on the first protrusion 24.

9 In addition to facilitating a good seal, the shape of the
10 neck 12, as best seen in FIG. 3, is ergonomically desirable. A
11 typical opened container 10 may be held easily with one hand
12 around the neck 12 below the flexible lip.

13 As seen in FIG. 3, a bottom section of the neck 12 is
14 generally vertical, and its exterior surface includes the
15 threaded-portion below the shoulder 13. That bottom section of
16 the neck 12 is narrower than the adjacent and integral upper part
17 of the base 11, and the skirt 22 is generally the same diameter
18 as the upper part of the base 11.

19 As best seen in FIGS. 1 and 3, a gap 14 remains between a
20 bottom edge of the cap 20 and an upper part of the base 11 in the
21 illustrated embodiment, when lower engagement of the cap 20 with
22 respect to the container 10 is blocked by contact between the
23 stopping surfaces 13 and 23. The gap 14 facilitates the cutting
24 of any label or tamper-evident tape applied to the filled cap and
25 container assembly before sale to the consumer.

1 In an alternative embodiment illustrated, in part, in FIG.
2 5, an additional annular protrusion 26 depends down from the
3 interior surface of the top 21. When the cap 20 is engaged with
4 the container 10, the additional protrusion 26 is radially
5 outside of the flexible lip of the neck 12, and is sufficiently
6 rigid and extends low enough and close enough to the lip to
7 resist the lip from moving outwardly when the lip is pressed down
8 upon engagement of the cap 20 with the container 10. The curved
9 cap top 21 flexes up, causing the rigid additional protrusion 26
10 to press the flexible lip inwardly. This will maintain the
11 pressure on the sealing surfaces 15 and 17, and improve the
12 sealing between the upper exterior sealing surface 15 and the
13 second protrusions 25 and between the lower interior sealing
14 surface 17 and the first protrusion 24. The additional annular
15 protrusion 26 will compensate for manufacturing imperfections,
16 such as a surface of the neck 12 being slightly out of the round,
17 which would diminish the ability to achieve a good seal. The
18 possibility of such imperfections cannot always be eliminated
19 given the tolerances achievable in the manufacture of inexpensive
20 containers.

21 The embodiments discussed and/or shown in the figures are
22 examples. They are not exclusive ways to practice the present
23 invention, and it should be understood that there is no intent to
24 limit the invention by such disclosure. Rather, it is intended
25 to cover all modifications and alternative constructions and

- 1 embodiments that fall within the spirit and the scope of the
- 2 invention as defined in the following claims:

What is claimed is:

1 1. A cap and container assembly comprising:

2 a container and a cap;

3 the container including a base, and a neck for engagement
4 with the cap, an end of the neck defining a container mouth;

5 the neck being substantially symmetrical about a central
6 vertical axis, the neck forming a flexible lip, proximate the
7 mouth, with an upper, generally frusto-conical, exterior sealing
8 surface, the neck further forming a lower, generally frusto-
9 conical, interior sealing surface, the neck further forming an
10 exterior circumferential shoulder of greater diameter than a
11 diameter of the lip;

12 the cap including a top, a skirt depending peripherally from
13 the top, first and second annular sealing protrusions depending
14 from an interior surface of the top, and at least one stopping
15 projection on an interior surface of the skirt;

16 the top being generally convex as viewed from inside the
17 cap;

18 wherein, upon securing engagement of the skirt with a bottom
19 section of the neck, the first sealing protrusion sealingly
20 engages the lower interior sealing surface, and the second
21 sealing protrusion sealingly engages the upper exterior sealing
22 surface; and

23 wherein the shoulder and the at least one stopping
24 projection engage to form a positive stop to lower engagement of

25 the cap with respect to the container, ensuring sealing contact
26 between the first sealing protrusion and the lower interior
27 sealing surface and between the second sealing protrusion and the
28 upper exterior sealing surface, and forming a gap between a
29 bottom edge of the cap and an upper part of the base.

1 2. A cap and container assembly as in claim 1 wherein an
2 intersection of the upper exterior sealing surface with any plane
3 which includes the central vertical axis would form a straight
4 line segment which would form an angle of about 10° to about 20°
5 with its projection on an imaginary horizontal plane, and an
6 intersection of the lower interior sealing surface with any plane
7 which includes the central vertical axis would form a straight
8 line segment which would form an angle of about 10° to about 20°
9 with its projection on a surface of an imaginary vertical
10 cylinder.

1 3. A cap and container assembly comprising:

2 a container and a cap;
3 the container including a base, and a neck for sealing
4 engagement with the cap, an end of the neck defining a container
5 mouth;

6 wherein stopping surfaces of the cap and the container
7 engage to form a positive stop to lower engagement of the cap
8 with respect to the container.

4. A cap and container assembly as in claim 3, the stopping surfaces comprising at least one stopping projection on an interior surface of the cap and a shoulder on an exterior surface of the neck.

5. A cap and container assembly as in claim 3, wherein a gap remains between a bottom edge of the cap and an upper part of the base, upon engagement of the stopping surfaces.

6. A cap and container assembly as in claim 3, wherein the sealing engagement of the cap with the neck temporarily deforms a shape of at least one of a group consisting of the cap and the neck, and wherein an extent of said deformation can be limited upon engagement of the stopping surfaces.

7. A cap and container assembly as in claim 3, the cap including at least one annular protrusion which can sealingly engage an interior surface of the neck.

8. A cap and container assembly as in claim 3, the cap including at least one annular protrusion which can sealingly engage an exterior surface of the neck.

9. A cap and container assembly as in claim 3, the cap including at least one first annular protrusion which can sealingly engage a first surface of the neck and at least one second annular

4 protrusion which can sealingly engage a second surface of the
5 neck.

1 10. A cap and container assembly as in claim 9, wherein an
2 interior surface of the neck includes the first surface, and an
3 exterior surface of the neck includes the second surface.

1 11. A cap and container assembly as in claim 10, the cap further
2 including a top and a skirt depending peripherally from the top;
3 wherein the cap can be secured to the container by threading
4 engagement of a threaded-portion of an interior surface of the
5 skirt with a threaded-portion of the exterior surface of the
6 neck, the first and second protrusions depend from an interior
7 surface of the top, and the stopping surfaces comprise at least
8 one stopping projection on the interior surface of the skirt and
9 a shoulder on the exterior surface of the neck above the
10 threaded-portion of the exterior surface of the neck.

1 12. A cap and container assembly comprising:
2 a container and a cap;
3 the container including a base, and a neck for engagement
4 with the cap, an end of the neck defining a container mouth;
5 the neck being substantially symmetrical about a central
6 vertical axis, the neck forming a flexible lip, proximate the
7 mouth, with an upper, generally frusto-conical, exterior sealing
8 surface, the neck further forming a lower, generally frusto-

9 conical, interior sealing surface, the neck further forming a
10 bottom exterior surface, of greater diameter than the diameter of
11 the lip, for securing engagement with the cap;

12 the cap including a top, a skirt depending peripherally from
13 the top, at least one first annular sealing protrusion depending
14 from an interior surface of the top, and at least one second
15 annular sealing protrusion depending from the interior surface of
16 the top;

17 wherein, upon securing engagement of the skirt with the
18 bottom exterior surface of the neck, the at least one first
19 sealing protrusion sealingly engages the lower interior sealing
20 surface, and the at least one second sealing protrusion sealingly
21 engages the upper exterior sealing surface.

1 13. A cap and container assembly as in claim 12, wherein the
2 sealing engagement of the sealing protrusions with the sealing
3 surfaces, respectively, temporarily deforms a shape of at least
4 one of a group consisting of the cap and the neck.

1 14. A cap and container assembly as in claim 12, the top of the
2 cap being generally convex as viewed from inside the cap.

1 15. A cap and container assembly as in claim 12, the cap further
2 including an additional annular protrusion depending from the
3 interior surface of the top, the additional annular protrusion
4 being radially outside of the first and second sealing

5 protrusions and, upon engagement of the cap with the container,
6 radially outside of the lip;

7 the additional annular protrusion being sufficiently rigid
8 and extending low enough and close enough to the flexible lip,
9 upon engagement of the cap with the container, to resist the lip
10 from moving outwardly.

1 16. A cap and container assembly as in claim 12, wherein the cap
2 is manufactured of a flexible plastic material.

1 17. A cap and container assembly as in claim 12, wherein the
2 container is manufactured of a flexible plastic material.

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FIG. 1

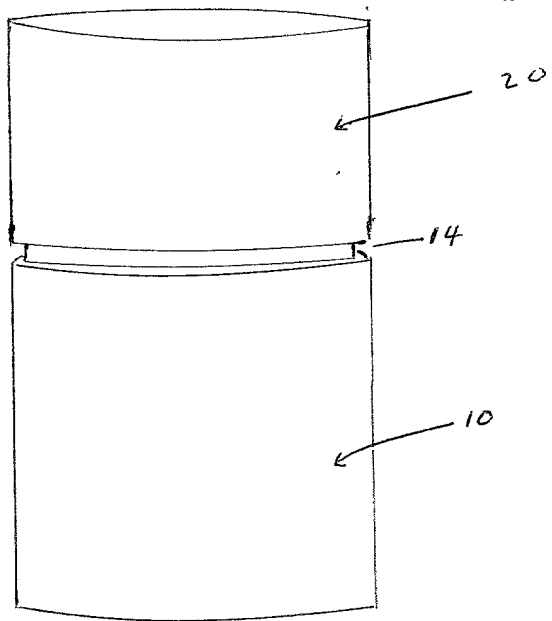
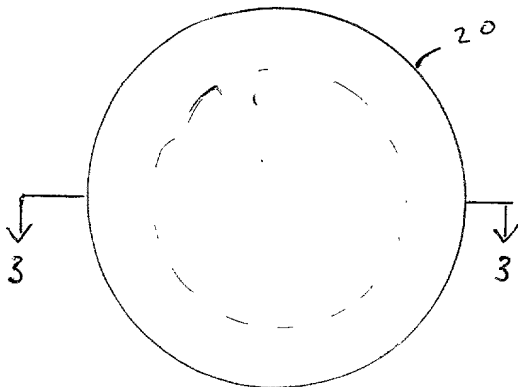
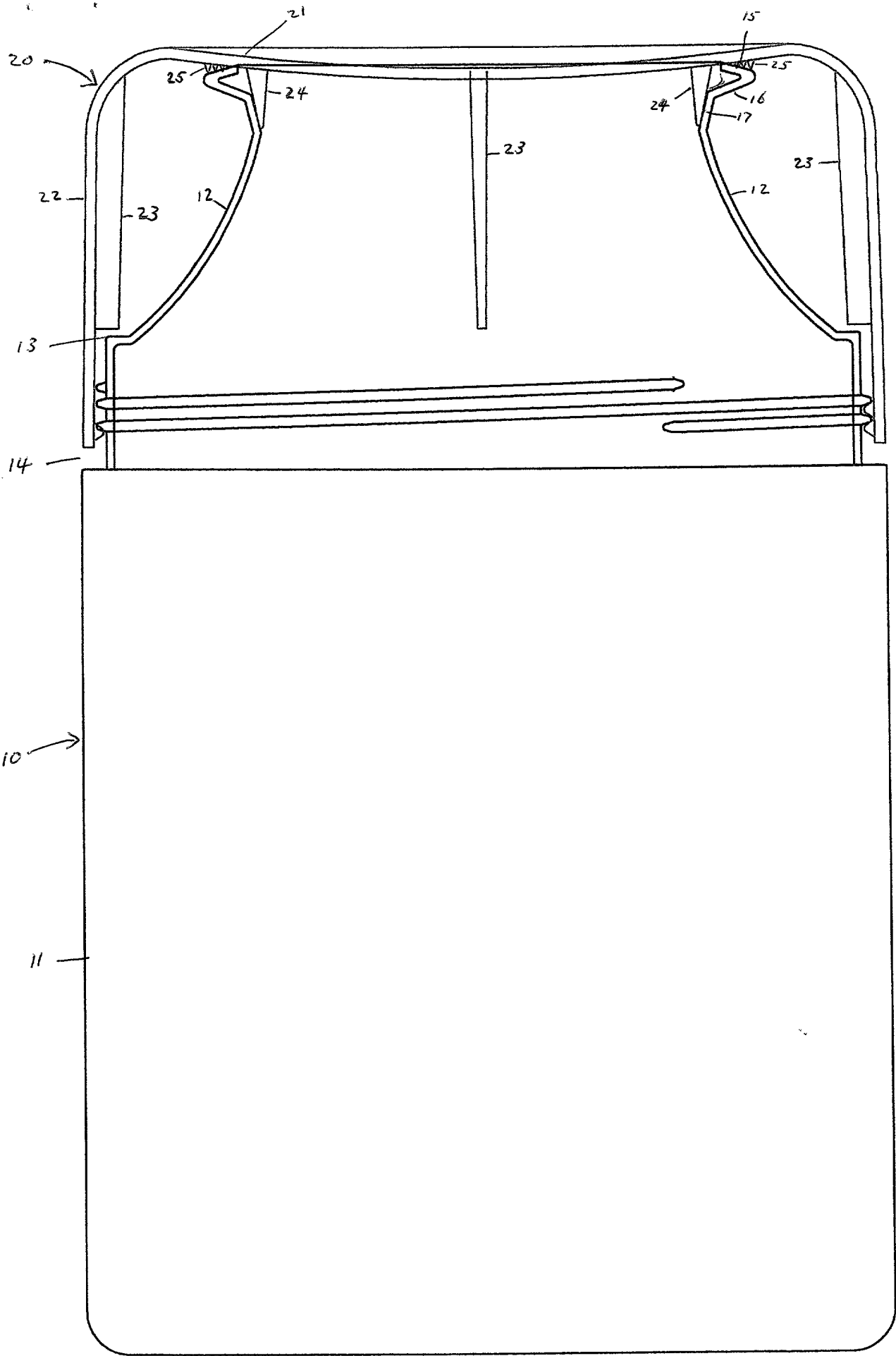


FIG. 2



09475301 12399
666227 1054460

FIG. 3



0347301.1006460

FIG. 4

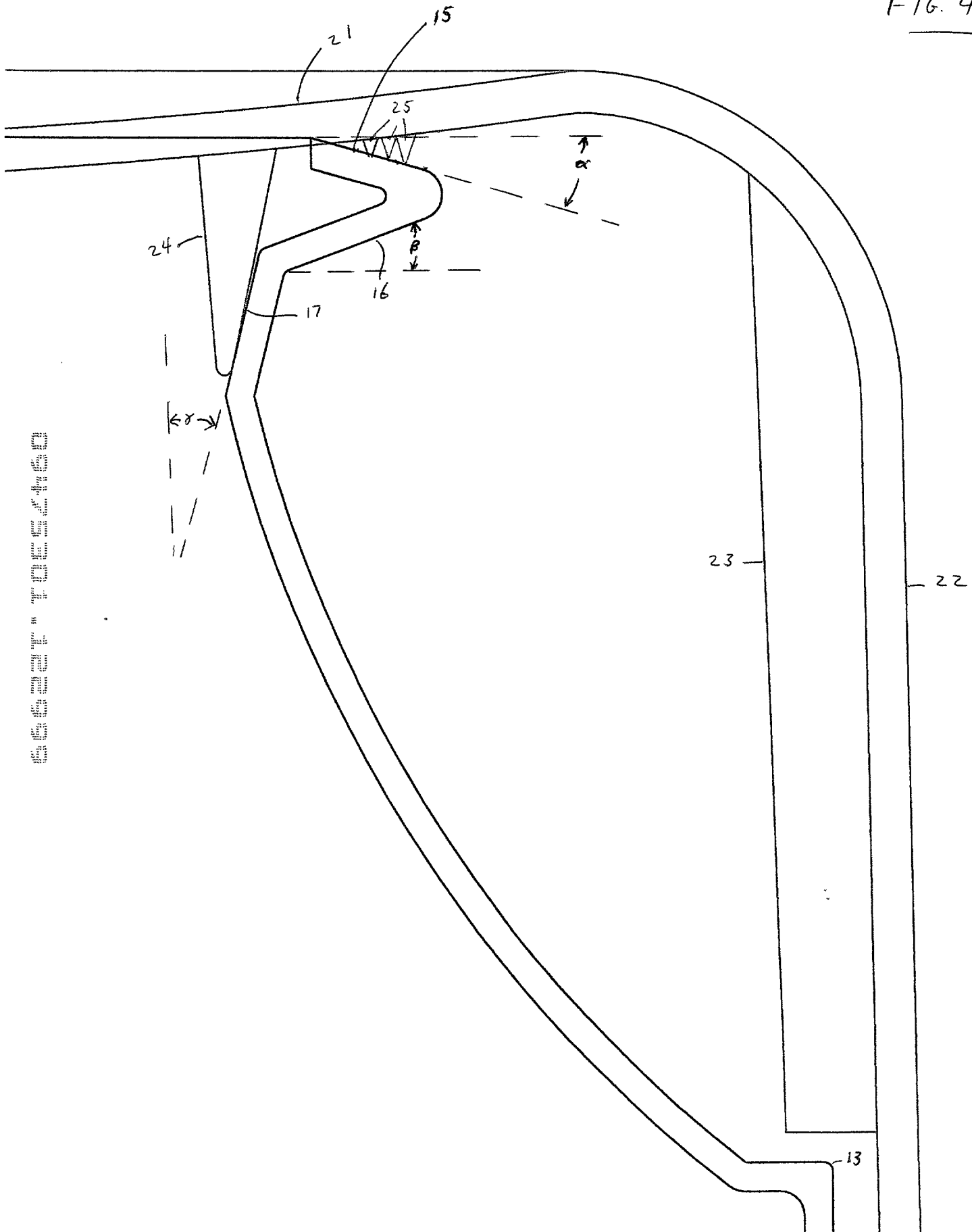
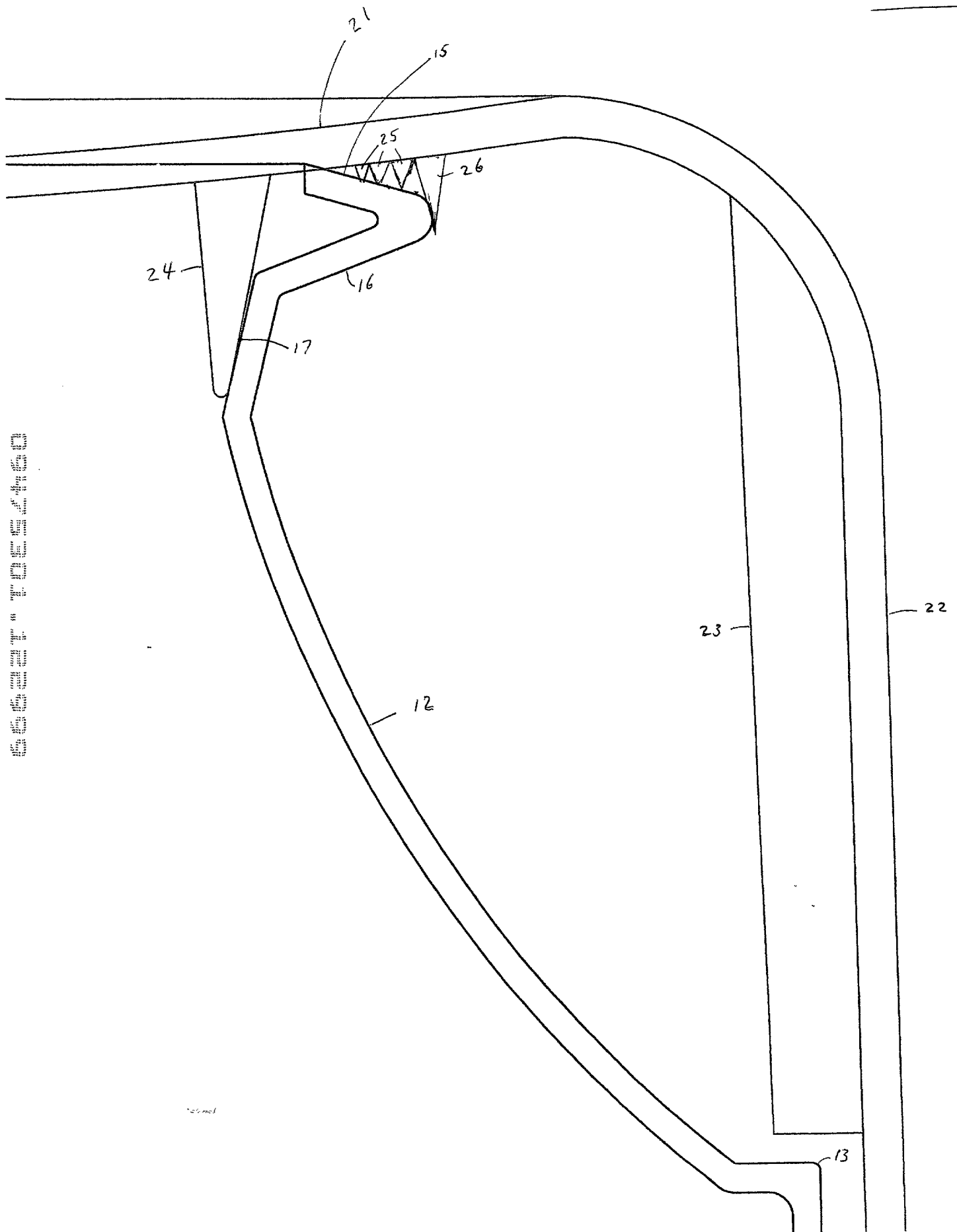


FIG. 5



DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare:

That my residence, post office address and citizenship are as stated below next to my name.

That I verily believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural inventors are named below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

CAP AND CONTAINER ASSEMBLY

the specification of which (check one)

(X) is attached hereto.

() was filed on _____ as
Application Serial No. _____
and was amended on _____
(if applicable)

That I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

That I acknowledge the duty to disclose information known to be material to patentability of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

That I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate on this invention having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)

Priority Claimed

☐ Yes ☐ No

(Number) (Country) (Day/Month/Year Filed)

☐ Yes ☐ No

(Number) (Country) (Day/Month/Year Filed)

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below.

(Application Number) (Filing Date)

(Application Number) (Filing Date)

That I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

United States Application(s)

(Application Serial No.) (Filing Date) (Status)-(Patented, pending, abandoned)

(Application Serial No.) (Filing Date) (Status)-(Patented, pending, abandoned)

That all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

I hereby appoint the following attorneys, with full power of substitution and revocation, to prosecute this application and to transact all business in the United States Patent and Trademark Office connected therewith and request that all correspondence and telephone calls in respect to this application be directed to WELSH & KATZ, LTD., 120 South Riverside Plaza, 22nd Floor, Chicago, Illinois 60606, Telephone No. (312) 655-1500:

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Eric C. Cohen	27,429
Joseph R. Marcus	25,060
Gerald S. Schur	22,053
Gerald T. Shekleton	27,466
James A. Scheer	29,434
Daniel R. Cherry	29,054
Edward P. Gamson	29,381
Kathleen A. Rheintgen	34,044
Thomas W. Tolpin	27,600
Jon P. Christensen	34,137
Leonard Friedman	37,135

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12-10-99

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